

# MS Word Exhibit 300 for O&M (BY2008) (Form) / JSC Software Development/Integration Laboratory (Item)

Form Report, printed by: System Administrator, Jan 31, 2007

## OVERVIEW

### General Information

|  |   |
|--|---|
| <b>1. Date of Submission:</b>  | Jan 24, 2007                                    |
| <b>2. Agency:</b>  | 026   |
| <b>3. Bureau:</b>  | 00  |
| <b>4. Name of this Capital Asset:</b>  | JSC Software Development/Integration Laboratory |
| <b>Investment Portfolio:</b>   | BY OMB 300 Items                                |
| <b>5. Unique ID:</b>   | 026-00-01-03-01-1408-00                         |
| <b>(For IT investments only, see section 53. For all other, use agency ID system.)</b> |   |

### All investments

6. What kind of investment will this be in FY2008?

(Please NOTE: Investments moving to O&M ONLY in FY2008, with Planning/Acquisition activities prior to FY2008 should not select O&M. These investments should indicate their current status.)

Operations and Maintenance

7. What was the first budget year this investment was submitted to OMB?

FY2005

8. Provide a brief summary and justification for this investment, including a brief description of how this closes in part or in whole an identified agency performance gap.

The Software Development and Integration Laboratory (SDIL)/Avionics is the Command and Data Handling (C&DH) subsystem utilizing the onboard computer and network capabilities of the International Space Station (ISS). It also includes the ground support and test functions for the associated ground operations and sustaining engineering.

The C&DH subsystem encompasses:

Hardware/Software Integration (HSI), Perform ISS HSI, design integration, command and telemetry verification, and stage software verification; Provide flight support including C&DH MER console support and mission flight following; Provide flight software support at KSC and MOD personnel

Portable computer System (PCS) and Station Support Computer (SSC) Application and display development and reconfiguration.

Guidance, Navigation & Control (GN&C), Perform engineering analysis, GN&C subsystem integration, and design of mission specific Pre-Position Loads (PPLs);

Communications & Tracking (C&T), Perform C&T subsystem analysis and subsystem integration; Prepare CoFR packages; Perform Audio, Space to Space, Space to Ground Ku-Band, and S-Band evidence of requirements closure

C&DH Hardware, Maintain and sustain C&DH hardware; Perform C&DH networks analysis;

Consolidated Laboratories, Provide and sustain the SVF, PSPF and SITE test rigs and expand the ISIL ITR; Perform SDIL systems engineering, maintenance and operation and perform test rig management; Provide computer systems security for all systems and ADPE.

The SDIL Investment is managed as a component of the NASA project under NASA's NPG 7120 process. The FY 2005 annual JSC IT Capital Planning and Investment Control (CPIC) process Review Board, Chaired by the JSC CIO, reviewed and approved this investment.

The ISS prime contract was awarded in 1993 to Boeing as a performance based contract for the total integrated design, development, manufacture, and integration of the U.S. On-Orbit Segment (USOS) of the ISS. Boeing is responsible for integrating all ISS systems and subsystems such as the C&DH subsystem, including International Partner/Participant (IP/P) elements which interface with the USOS, government furnished equipment (GFE) developed by other contractors and provided to Boeing, providing ground support equipment (GSE), and providing technical support for ground and orbital operations.

9. Did the Agency's Executive/Investment Committee approve this request?

Yes

9.a. If "yes," what was the date of this approval?

Jan 1, 1995

10. Did the Project Manager review this Exhibit?

Yes

12. Has the agency developed and/or promoted cost effective, energy-efficient and environmentally sustainable techniques or practices for this project.

Yes

12.a. Will this investment include electronic assets (including computers)?

Yes

12.b. Is this investment for new construction or major retrofit of a Federal building or facility? (answer applicable to non-IT assets only)

No

12.b.1. If "yes," is an ESPC or UESC being used to help fund this investment?

12.b.2. If "yes," will this investment meet sustainable design principles?

12.b.3. If "yes," is it designed to be 30% more energy efficient than relevant code?

13. Does this investment support one of the PMA initiatives?

Yes

If "yes," select the initiatives that apply:

|   |     |
|---|-----|
| <b>Human Capital</b>  | Yes |
| <b>Budget Performance Integration</b>                                 | Yes |
| <b>Financial Performance</b>  | Yes |
| <b>Expanded E-Government</b>  | Yes |
| <b>Competitive Sourcing</b>   | Yes |
| <b>Faith Based and Community</b>                                      |     |
| <b>Real Property Asset Management</b>                                 |     |
| <b>Eliminating Improper Payments</b>                                  |     |
| <b>Privatization of Military Housing</b>                              |     |
| <b>R and D Investment Criteria</b>                                    |     |
| <b>Housing and Urban Development Management and Performance</b>       |     |
| <b>Broadening Health Insurance Coverage through State Initiatives</b> |     |
| <b>Right Sized Overseas Presence</b>                                  |     |
| <b>Coordination of VA and DoD Programs and Systems</b>                |     |

13.a. Briefly describe how this asset directly supports the identified initiative(s)?

NASA full cost budgeting & accounting process improves financial management, while linking budget and performance. The SDIL prime contractor was sole source selected by the agency and the white house. Support contracts are competitively sourced. This investment supports strategic human capital management & allocation as part of the continued effort to keep the Shuttle flying safely. It advances agency efforts to leverage new IT technologies & create electronic access for program performance.

14. Does this investment support a program assessed using OMB's Program Assessment Rating Tool (PART)?

Yes

14.a. If "yes," does this investment address a weakness found during the PART review?

|  |
|--|
| No   |
| 14.b. If "yes," what is the name of the PART program assessed by OMB's Program Assessment Rating Tool? |
| International Space Station  |
| 14.c. If "yes," what PART rating did it receive?   |
| Moderately Effective   |
| 15. Is this investment for information technology (See section 53 for definition)?                     |
| Yes  |

| For information technology investments only:  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
|---|------------|---|------|------------|--------------|----------|------|--|----------|------|--|----------|-------|--|-------|------|--|-------|--------|---|
| 16. What is the level of the IT Project (per CIO Council's PM Guidance)?  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| Level 3   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 17. What project management qualifications does the Project Manager have? (per CIO Council's PM Guidance)   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| (1) Project manager has been validated as qualified for this investment   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 18. Is this investment identified as "high risk" on the Q4 - FY 2006 agency high risk report (per OMB's "high risk" memo)?  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| No  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 19. Is this a financial management system?  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| No  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 19.a. If "yes," does this investment address a FFMIA compliance area?   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
|   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 19.a.1. If "yes," which compliance area:  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
|   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 19.a.2. If "no," what does it address?  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
|   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 19.b. If "yes," please identify the system name(s) and system acronym(s) as reported in the most recent financial systems inventory update required by Circular A-11 section 52.  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
|   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 20. What is the percentage breakout for the total FY2008 funding request for the following? (This should total 100%)  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| <table border="1"> <thead> <tr> <th>Area</th> <th>Percentage</th> <th></th> </tr> </thead> <tbody> <tr> <td>Hardware</td> <td>2.00</td> <td></td> </tr> <tr> <td>Software</td> <td>1.00</td> <td></td> </tr> <tr> <td>Services</td> <td>97.00</td> <td></td> </tr> <tr> <td>Other</td> <td>0.00</td> <td></td> </tr> <tr> <td>Total</td> <td>100.00</td> <td>★</td> </tr> </tbody> </table> |            |   | Area | Percentage |              | Hardware | 2.00 |  | Software | 1.00 |  | Services | 97.00 |  | Other | 0.00 |  | Total | 100.00 | ★ |
| Area  | Percentage |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| Hardware  | 2.00       |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| Software  | 1.00       |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| Services  | 97.00      |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| Other   | 0.00       |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| Total   | 100.00     | ★ |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 21. If this project produces information dissemination products for the public, are these products published to the Internet in conformance with OMB Memorandum 05-04 and included in your agency inventory, schedules and priorities?  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| N/A   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| 22. Contact information of individual responsible for privacy related questions   |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| <table border="1"> <tr> <td>Name</td> <td></td> </tr> <tr> <td>Phone Number</td> <td></td> </tr> </table>   |            |   | Name |            | Phone Number |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| Name  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |
| Phone Number  |            |   |      |            |              |          |      |  |          |      |  |          |       |  |       |      |  |       |        |   |

|              |  |
|--------------|--|
| <b>Title</b> |  |
| <b>Email</b> |  |

23. Are the records produced by this investment appropriately scheduled with the National Archives and Records Administration's approval?

Yes

## SUMMARY OF FUNDING

### SUMMARY OF SPENDING FOR PROJECT PHASES (In Millions)

1. Provide the total estimated life-cycle cost for this investment by completing the following table. All amounts represent budget authority in millions, and are rounded to three decimal places. Federal personnel costs should be included only in the row designated "Government FTE Cost," and should be excluded from the amounts shown for "Planning," "Full Acquisition," and "Operation/Maintenance." The total estimated annual cost of the investment is the sum of costs for "Planning," "Full Acquisition," and "Operation/Maintenance." For Federal buildings and facilities, life-cycle costs should include long term energy, environmental, decommissioning, and/or restoration costs. The costs associated with the entire life-cycle of the investment should be included in this report.

All amounts represent Budget Authority

(Estimates for BY+1 and beyond are for planning purposes only and do not represent budget decisions)

|   | PY      | CY      | BY      |
|---|---------|---------|---------|
|   | 2006    | 2007    | 2008    |
| <b>Planning:</b>                            | 0.000   | 0.000   | 0.000   |
| <b>Acquisition:</b>                         | 0.000   | 0.000   | 0.000   |
| <b>Subtotal Planning &amp; Acquisition:</b> | 0.000   | 0.000   | 0.000   |
| <b>Operations &amp; Maintenance:</b>        | 149.284 | 134.307 | 126.302 |
|   |         |         |         |
| <b>TOTAL</b>                                | 149.284 | 134.307 | 126.302 |
|   |         |         |         |
| <b>Government FTE Costs</b>                 | 5.630   | 5.820   | 6.016   |
| <b># of FTEs</b>                            | 45.0    | 45.0    | 45.0    |
|   |         |         |         |
| <b>Total, BR + FTE Cost</b>                 | 154.914 | 140.127 | 132.318 |

Note: For the cross-agency investments, this table should include all funding (both managing partner and partner agencies).

Government FTE Costs should not be included as part of the TOTAL represented.

2. Will this project require the agency to hire additional FTE's?

No

2.a. If "yes," how many and in what year?

3. If the summary of spending has changed from the FY2007 President's budget request, briefly explain those changes.

Budget Comments \* Internal Use Only\*

Since this is an ongoing investment, NASA policy is a 6 year planning horizon on future lifecycle costs

## PERFORMANCE

### Performance Information

*In order to successfully address this area of the exhibit 300, performance goals must be provided for the agency and be linked to the annual performance plan. The investment must discuss the agency's mission and strategic goals, and performance measures must be provided. These goals need to map to the gap in the agency's strategic goals and objectives this investment is designed to fill. They are the internal and external performance benefits this investment is expected to deliver to the agency (e.g., improve efficiency by 60 percent, increase citizen participation by 300 percent a year to achieve an overall citizen participation rate of 75 percent by FY 2xxx, etc.). The goals must be clearly measurable investment outcomes, and if applicable, investment outputs. They do not include the completion date of the module, milestones, or investment, or general goals, such as, significant, better, improved that do not have a quantitative or qualitative measure.*

*Agencies must use Table 1 below for reporting performance goals and measures for all non-IT investments and for existing IT investments that were initiated prior to FY 2005. The table can be extended to include measures for years beyond FY 2006.*

Table 1

|    | Fiscal Year | Strategic Goal(s) Supported   | Performance Measure   | Actual/<br>baseline (from<br>Previous Year) | Planned<br>Performance<br>Metric<br>(Target) | Performance<br>Metric Results<br>(Actual) |
|----|-------------|---|---|---|--|---|
| 1  | 2007        | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | 99%   | 95% Minimum                                  |   |
| 2  | 2007        | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | 5.75  | 5.00   |   |
| 3  | 2008        | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | N/A   | 95% Minimum                                  |   |
| 4  | 2008        | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | N/A   | 5.00   |   |
| 5  | 2009        | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | N/A   | 95% Minimum                                  |   |
| 6  | 2009        | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | N/A   | 5.00   |   |
| 7  | 2010        | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | N/A   | 95% Minimum                                  |   |
| 8  | 2010        | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | N/A   | 5.00   |   |
| 9  | 2011        | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | N/A   | 95% Minimum                                  |   |
| 10 | 2011        | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | N/A   | 5.00   |   |
| 11 | 2003        | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | 99%   | 95% Minimum                                  | 99%                                       |

|           |      |   |   |      |             |      |
|-----------|------|---|---|------|-------------|------|
| <b>12</b> | 2003 | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | 5.75 | 5.00        | 5.50 |
| <b>13</b> | 2004 | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | 99%  | 95% Minimum | 99%  |
| <b>14</b> | 2004 | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | 5.50 | 5.00        | 5.50 |
| <b>15</b> | 2005 | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | 99%  | 95% Minimum | 99%  |
| <b>16</b> | 2005 | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | 5.00 | 5.00        | 5.00 |
| <b>17</b> | 2006 | Goal 8 – Ensure the provision of space access and improve it by increasing safety, reliability, and affordability.          | Server Availability of 95% as identified in contract requirements                         | 99%  | 95% Minimum | TBD  |
| <b>18</b> | 2006 | Goal 9 – Extend the duration and boundaries of human space flight to create new opportunities for exploration and discovery | Software Quality Improvement - New ISS Software defects found on orbit per on orbit KSLOC | 5.00 | 5.00        | TBD  |

All new IT investments initiated for FY 2005 and beyond must use Table 2 and are required to use the FEA Performance Reference Model (PRM). Please use Table 2 and the PRM to identify the performance information pertaining to this major IT investment. Map all Measurement Indicators to the corresponding "Measurement Area" and "Measurement Grouping" identified in the PRM. There should be at least one Measurement Indicator for at least four different Measurement Areas (for each fiscal year). The PRM is available at [www.egov.gov](http://www.egov.gov).

Table 2

|          | <b>Fiscal Year</b> | <b>Measurement Area</b>      | <b>Measurement Category</b>   | <b>Measurement Grouping</b> | <b>Measurement Indicator</b>  | <b>Baseline</b> | <b>Planned Improvements to the Baseline</b>                    | <b>Actual Results</b> |
|----------|--------------------|------------------------------|-------------------------------|-----------------------------|---|-----------------|--|-----------------------|
| <b>1</b> | 2006               | Mission and Business Results | Transportation                | Space Operations            | Mission Critical Space Station Software Anomalies/ Software Deficits. Goal 8, Objective 8.4 Assure capabilities for world-class research on a laboratory in low Earth orbit.          | 0               | Maintain baseline  | 0                     |
| <b>2</b> | 2006               | Customer Results             | Timeliness and Responsiveness | Delivery Time               | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates Goal 8 and Goal 9 | 100%            | Maintain 100% Baseline   | 100%                  |
| <b>3</b> | 2006               | Processes and Activities     | Quality                       | Errors                      | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC Goal 8 and Goal 9  | 5.0             | Target less than 5.0 defects                                   | 5.0                   |
| <b>4</b> | 2006               | Technology                   | Reliability and Availability  | Availability                | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations. Goal 8 and Goal 9   | 99%             | Maintain a minimum of 95% availability for servers in the SDIL | 98.8%                 |
| <b>5</b> | 2007               | Mission and Business Results | Transportation                | Space Operations            | Mission Critical Space Station Software Anomalies/ Software Deficits. Goal 8, Objective 8.4 Assure capabilities for world-class research on a laboratory in low Earth orbit.          | 0               | Maintain baseline  | TBD                   |
| <b>6</b> | 2007               | Customer Results             | Timeliness and Responsiveness | Delivery Time               | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates Goal 8 and Goal 9 | 100%            | Maintain 100% Baseline   | TBD                   |

|           |      |                              |                               |                  |   |      |  |     |
|-----------|------|------------------------------|-------------------------------|------------------|---|------|--|-----|
| <b>7</b>  | 2007 | Processes and Activities     | Quality                       | Errors           | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC Goal 8 and Goal 9  | 5.0  | Target less than 5.0 defects                                   | TBD |
| <b>8</b>  | 2007 | Technology                   | Reliability and Availability  | Availability     | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations. Goal 8 and Goal 9   | 99%  | Maintain a minimum of 95% availability for servers in the SDIL | TBD |
| <b>9</b>  | 2008 | Mission and Business Results | Transportation                | Space Operations | Mission Critical Space Station Software Anomalies/ Software Deficits. Goal 8, Objective 8.4 Assure capabilities for world-class research on a laboratory in low Earth orbit.          | 0    | Maintain baseline  | TBD |
| <b>10</b> | 2008 | Customer Results             | Timeliness and Responsiveness | Delivery Time    | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates Goal 8 and Goal 9 | 100% | Maintain 100% Baseline   | TBD |
| <b>11</b> | 2008 | Processes and Activities     | Quality                       | Errors           | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC Goal 8 and Goal 9  | 5.0  | Target less than 5.0 defects                                   | TBD |
| <b>12</b> | 2008 | Technology                   | Reliability and Availability  | Availability     | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations. Goal 8 and Goal 9   | 99%  | Maintain a minimum of 95% availability for servers in the SDIL | TBD |
| <b>13</b> | 2009 | Mission and Business Results | Transportation                | Space Operations | Mission Critical Space Station Software Anomalies/ Software Deficits  | 0    | Maintain baseline  | TBD |
| <b>14</b> | 2009 | Customer Results             | Timeliness and Responsiveness | Delivery Time    | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates                   | 100% | Maintain 100% Baseline   | TBD |
| <b>15</b> | 2009 | Processes and Activities     | Quality                       | Errors           | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC  | 5.0  | Target Less then 5.0 defects                                   | TBD |
| <b>16</b> | 2009 | Technology                   | Reliability and Availability  | Availability     | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations.                     | 99%  | Maintain a minimum of 95% availability for servers in the SDIL | TBD |
| <b>17</b> | 2010 | Mission and Business Results | Transportation                | Space Operations | Mission Critical Space Station Software Anomalies/ Software Deficits  | 0    | Maintain baseline  | TBD |
| <b>18</b> | 2010 | Customer Results             | Timeliness and Responsiveness | Delivery Time    | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates                   | 100% | Maintain 100% Baseline   | TBD |
| <b>19</b> | 2010 | Processes and Activities     | Quality                       | Errors           | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC  | 5.0  | Target Less then 5.0 defects                                   | TBD |
| <b>20</b> | 2010 | Technology                   | Reliability and Availability  | Availability     | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations.                     | 99%  | Maintain a minimum of 95% availability for servers in the SDIL | TBD |



|           |      |                              |                               |                  |   |      |  |       |
|-----------|------|------------------------------|-------------------------------|------------------|---|------|--|-------|
| <b>21</b> | 2011 | Mission and Business Results | Transportation                | Space Operations | Mission Critical Space Station Software Anomalies/ Software Deficits  | 0    | Maintain baseline  | TBD   |
| <b>22</b> | 2011 | Customer Results             | Timeliness and Responsiveness | Delivery Time    | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates | 100% | Maintain 100% Baseline   | TBD   |
| <b>23</b> | 2011 | Processes and Activities     | Quality                       | Errors           | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC  | 5.0  | Target Less then 5.0 defects                                   | TBD   |
| <b>24</b> | 2011 | Technology                   | Reliability and Availability  | Availability     | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations.   | 99%  | Maintain a minimum of 95% availability for servers in the SDIL | TBD   |
| <b>25</b> | 2003 | Mission and Business Results | Transportation                | Space Operations | Mission Critical Space Station Software Anomalies/ Software Deficits  | 0    | Maintain Baseline  | 0     |
| <b>26</b> | 2003 | Customer Results             | Timeliness and Responsiveness | Delivery Time    | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates | 100% | Maintain 100% Baseline   | 100%  |
| <b>27</b> | 2003 | Processes and Activities     | Quality                       | Errors           | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC  | 5.0  | Target Less then 5.0 defects                                   | 5.0   |
| <b>28</b> | 2003 | Technology                   | Reliability and Availability  | Availability     | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations.   | 99%  | Maintain a minimum of 95% availability for servers in the SDIL | 98.8% |
| <b>29</b> | 2004 | Mission and Business Results | Transportation                | Space Operations | Mission Critical Space Station Software Anomalies/ Software Deficits  | 0    | Maintain Baseline  | 0     |
| <b>30</b> | 2004 | Customer Results             | Timeliness and Responsiveness | Delivery Time    | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates | 100% | Maintain 100% Baseline   | 100%  |
| <b>31</b> | 2004 | Processes and Activities     | Quality                       | Errors           | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC  | 5.0  | Target Less then 5.0 defects                                   | 5.0   |
| <b>32</b> | 2004 | Technology                   | Reliability and Availability  | Availability     | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations.   | 99%  | Maintain a minimum of 95% availability for servers in the SDIL | 98.8% |
| <b>33</b> | 2005 | Mission and Business Results | Transportation                | Space Operations | Mission Critical Space Station Software Anomalies/ Software Deficits  | 0    | Maintain Baseline  | 0     |
| <b>34</b> | 2005 | Customer Results             | Timeliness and Responsiveness | Delivery Time    | Software Products delivered on-time based on Avionics and software schedules on the original calendar plan (block release basis), decoupling them from launch dates | 100% | Maintain 100% Baseline   | 100%  |
| <b>35</b> | 2005 | Processes and Activities     | Quality                       | Errors           | New ISS Software Defects Found On-Orbit per On-Orbit KSLOC  | 5.0  | Target Less then 5.0 defects                                   | 5.0   |

|    |      |            |                              |              |   |     |  |       |
|----|------|------------|------------------------------|--------------|---|-----|--|-------|
| 36 | 2005 | Technology | Reliability and Availability | Availability | Availability of 95% of the SDIL servers providing the ISS with latest Flight Avionics software which increases safety and reliability to ISS on orbit operations. | 99% | Maintain a minimum of 95% availability for servers in the SDIL | 98.8% |
|----|------|------------|------------------------------|--------------|---|-----|--|-------|

## EA

### Enterprise Architecture (EA)

*In order to successfully address this area of the business case and capital asset plan you must ensure the investment is included in the agency's EA and Capital Planning and Investment Control (CPIC) process, and is mapped to and supports the FEA. You must also ensure the business case demonstrates the relationship between the investment and the business, performance, data, services, application, and technology layers of the agency's EA.*

1. Is this investment included in your agency's target enterprise architecture?

Yes

1.a. If "no," please explain why?

2. Is this investment included in the agency's EA Transition Strategy?

Yes

2.a. If "yes," provide the investment name as identified in the Transition Strategy provided in the agency's most recent annual EA Assessment.

International Space Station

2.b. If "no," please explain why?

### Service Reference Model

3. Identify the service components funded by this major IT investment (e.g., knowledge management, content management, customer relationship management, etc.). Provide this information in the format of the following table. For detailed guidance regarding components, please refer to <http://www.whitehouse.gov/omb/egov/>.

Component: Use existing SRM Components or identify as "NEW". A "NEW" component is one not already identified as a service component in the FEA SRM.

Reused Name and UPI: A reused component is one being funded by another investment, but being used by this investment. Rather than answer yes or no, identify the reused service component funded by the other investment and identify the other investment using the Unique Project Identifier (UPI) code from the OMB Ex 300 or Ex 53 submission.

Internal or External Reuse?: 'Internal' reuse is within an agency. For example, one agency within a department is reusing a service component provided by another agency within the same department. 'External' reuse is one agency within a department reusing a service component provided by another agency in another department. A good example of this is an E-Gov initiative service being reused by multiple organizations across the federal government.

Funding Percentage: Please provide the percentage of the BY requested funding amount used for each service component listed in the table. If external, provide the funding level transferred to another agency to pay for the service.

|   | Agency Component Name | Agency Component Description  | Service Domain       | Service Type    | Component     | Reused Component Name | Reused UPI | Internal or External Reuse? | Funding % |
|---|-----------------------|---|----------------------|-----------------|---------------|-----------------------|------------|-----------------------------|-----------|
| 1 | Back Office Services  | Defines the set of capabilities that support the management of enterprise planning and transactional-based functions. | Back Office Services | Data Management | Data Recovery |                       |            | No Reuse                    | 15.00     |

|   |                  |  |                   |                                  |                                  |  |  |          |       |
|---|------------------|--|-------------------|----------------------------------|----------------------------------|--|--|----------|-------|
| 2 | Support Services | The Support Services Domain defines the set of cross-functional capabilities that can be leveraged independent of Service Domain objective and / or mission. | Support Services  | Security Management              | Access Control                   |  |  | No Reuse | 10.00 |
| 3 | Support Services | The Support Services Domain defines the set of cross-functional capabilities that can be leveraged independent of Service Domain objective and / or mission. | Support Services  | Security Management              | Intrusion Detection              |  |  | No Reuse | 5.00  |
| 4 | Support Services | The Support Services Domain defines the set of cross-functional capabilities that can be leveraged independent of Service Domain objective and / or mission. | Customer Services | Customer Relationship Management | NEW                              |  |  | No Reuse | 10.00 |
| 5 | Support Services | The Support Services Domain defines the set of cross-functional capabilities that can be leveraged independent of Service Domain objective and / or mission. | Support Services  | Security Management              | Access Control                   |  |  | No Reuse | 20.00 |
| 6 | Support Services | The Support Services Domain defines the set of cross-functional capabilities that can be leveraged independent of Service Domain objective and / or mission. | Customer Services | Customer Relationship Management | NEW                              |  |  | No Reuse | 10.00 |
| 7 | Support Services | The Support Services Domain defines the set of cross-functional capabilities that can be leveraged independent of Service Domain objective and / or mission. | Support Services  | Security Management              | Audit Trail Capture and Analysis |  |  | No Reuse | 15.00 |
| 8 | Support Services | The Support Services Domain defines the set of cross-functional capabilities that can be leveraged independent of Service Domain objective and / or mission. | Support Services  | Systems Management               | License Management               |  |  | No Reuse | 7.00  |
| 9 | Support Services | The Support Services Domain defines the set of cross-functional capabilities that can be leveraged independent of Service Domain objective and / or mission. | Support Services  | Systems Management               | System Resource Monitoring       |  |  | No Reuse | 8.00  |

#### Technical Reference Model

4. To demonstrate how this major IT investment aligns with the FEA Technical Reference Model (TRM), please list the Service Areas, Categories, Standards, and Service Specifications supporting this IT investment.

FEA SRM Component: Service Components identified in the previous question should be entered in this column. Please enter multiple rows for FEA SRM Components supported by multiple TRM Service Specifications.

Service Specification: In the Service Specification field, Agencies should provide information on the specified technical standard or vendor product mapped to the FEA TRM Service Standard, including model or version numbers, as appropriate.

| SRM Component   | Service Area                | Service Category |  |
|-----------------|-----------------------------|------------------|--|
| Risk Management | Service Access and Delivery | Access Channels  |  |

| SRM Component                     | Service Area                        | Service Category          |  |
|-----------------------------------|-------------------------------------|---------------------------|--|
| Risk Management                   | Service Access and Delivery         | Access Channels           |  |
| Risk Management                   | Service Access and Delivery         | Access Channels           |  |
| Risk Management                   | Service Access and Delivery         | Delivery Channels         |  |
| Risk Management                   | Service Access and Delivery         | Delivery Channels         |  |
| Risk Management                   | Service Access and Delivery         | Delivery Channels         |  |
| Requirements Management           | Service Access and Delivery         | Service Requirements      |  |
| Access Control                    | Service Access and Delivery         | Service Requirements      |  |
| Computers / Automation Management | Service Access and Delivery         | Service Requirements      |  |
| Computers / Automation Management | Service Access and Delivery         | Service Transport         |  |
| Computers / Automation Management | Service Platform and Infrastructure | Support Platforms         |  |
| Computers / Automation Management | Service Platform and Infrastructure | Support Platforms         |  |
| Computers / Automation Management | Service Platform and Infrastructure | Delivery Servers          |  |
| Software Development              | Service Platform and Infrastructure | Software Engineering      |  |
| Change Management                 | Service Platform and Infrastructure | Software Engineering      |  |
| Computers / Automation Management | Service Platform and Infrastructure | Software Engineering      |  |
| Computers / Automation Management | Service Platform and Infrastructure | Software Engineering      |  |
| Computers / Automation Management | Service Platform and Infrastructure | Database / Storage        |  |
| Library / Storage                 | Service Platform and Infrastructure | Database / Storage        |  |
| Computers / Automation Management | Service Platform and Infrastructure | Hardware / Infrastructure |  |
| Computers / Automation Management | Service Platform and Infrastructure | Hardware / Infrastructure |  |

| SRM Component                     | Service Area                      | Service Category         |  |
|-----------------------------------|-----------------------------------|--------------------------|--|
| Access Control                    | Component Framework               | Security                 |  |
| Indexing                          | Component Framework               | Presentation / Interface |  |
| Computers / Automation Management | Component Framework               | Business Logic           |  |
| Data Integration                  | Component Framework               | Data Interchange         |  |
| Computers / Automation Management | Service Interface and Integration | Integration              |  |
| Data Integration                  | Service Interface and Integration | Interoperability         |  |
| Data Integration                  | Service Interface and Integration | Interoperability         |  |
| Data Integration                  | Service Interface and Integration | Interoperability         |  |

5. Will the application leverage existing components and/or applications across the Government (i.e., FirstGov, Pay.Gov, etc)?

No

5.a. If "yes," please describe.

6. Does this investment provide the public with access to a government automated information system?

No

6.a. If "yes," does customer access require specific software (e.g., a specific web browser version)?

6.a.1. If "yes," provide the specific product name(s) and version number(s) of the required software and the date when the public will be able to access this investment by any software (i.e. to ensure equitable and timely access of government information and services).

|             |
|-------------|
| <b>RISK</b> |
|-------------|

|                        |
|------------------------|
| <b>Risk Management</b> |
|------------------------|

*You should perform a risk assessment during the early planning and initial concept phase of the investment's life-cycle, develop a risk-adjusted life-cycle cost estimate and a plan to eliminate, mitigate or manage risk, and be actively managing risk throughout the investment's life-cycle.*

*Answer the following questions to describe how you are managing investment risks.*

*1. Does the investment have a Risk Management Plan?*

Yes

*1.a. If "yes," what is the date of the plan?*

Aug 22, 2005

*1.b. Has the Risk Management Plan been significantly changed since last year's submission to OMB?*

No

*1.c. If "yes," describe any significant changes:*

*2. If there is currently no plan, will a plan be developed?*

*2.a. If "yes," what is the planned completion date?*

*2.b. If "no," what is the strategy for managing the risks?*

*3. Briefly describe how investment risks are reflected in the life cycle cost estimate and investment schedule: (O&M investments do NOT need to answer.)*

**COST & SCHEDULE****Cost and Schedule Performance**

1. Was operational analysis conducted?

Yes

1.a. If "yes," provide the date the analysis was completed.

Jan 24, 2007

1.b. If "yes," what were the results?

Operational analysis is conducted monthly during program reviews and the investment is within allowable margin for the cost at completion for the fiscal year.

1.c. If "no," please explain why it was not conducted and if there are any plans to conduct operational analysis in the future.

**Actual Performance against the Current Baseline**

2. Complete the following table to compare actual cost performance against the planned cost performance baseline. Milestones reported may include specific individual scheduled preventative and predictable corrective maintenance activities, or may be the total of planned annual operation and maintenance efforts).

2.a. What costs are included in the reported Cost/Schedule Performance information?

Contractor Only

|   | Description of Milestone | Planned End Date | Actual End Date | Planned Total Cost (\$mil) | Actual Total Cost (\$mil) | Schedule Variance (# of days) | Cost Variance (\$mil) |
|---|--------------------------|------------------|-----------------|----------------------------|---------------------------|-------------------------------|-----------------------|
| 1 | FY 06 Maintenance Cost   | Sep 30, 2006     |                 | 149.284                    |                           |                               |                       |
| 2 | FY 07 Maintenance Cost   | Sep 30, 2007     |                 | 134.307                    |                           |                               |                       |
| 3 | FY 08 Maintenance Cost   | Sep 30, 2008     |                 | 126.302                    |                           |                               |                       |

|                                       |  |                                  | DME | Steady State | Total |
|---------------------------------------|--|----------------------------------|-----|--------------|-------|
| Completion date:<br>Current Baseline: |  | Total cost:<br>Current Baseline: |     |              |       |
| Estimated completion date:            |  | Estimate at completion:          |     |              |       |